

# Defining Queries

## *Introduction*

The Query is a Superbase 4 tool for collecting and analyzing database information concerning specific parts of the BAS. Use the query to analyze data from three different databases: the Access Card summary, the Operator Transaction summary, and the Card Reader summary.

For example, define a query from the Card Reader summary to find out how often a particular door is used during certain times of the day. Or define a query from the Operator Transaction summary to find out how many times a particular operator has discarded Follow-Up reports over a specific period of time.

This chapter describes how to:

- define a query
- modify a query
- delete a query
- display a query
- print a query
- save a query to a file
- exit a query

## Key Concepts

### Superbase 4 Software

Superbase 4 program is a database management software package that maintains certain OWS databases. The Superbase 4 package included in Metasys software is a runtime version and does not have full Superbase 4 software capabilities.

The runtime version of Superbase 4 software that comes with Metasys Release 4.0 or higher can define the title and output sections of a query. To define the destination section, purchase the full Superbase 4 package.

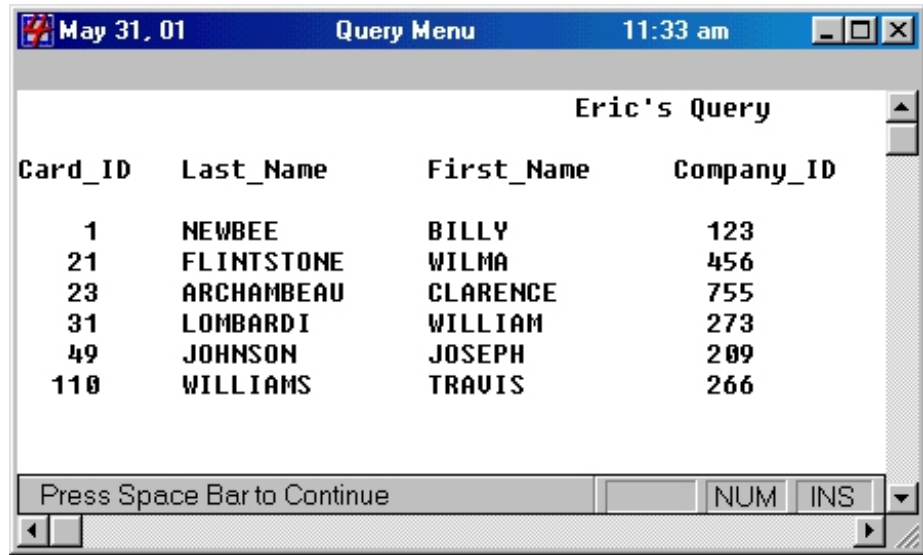
### Query Definition

To define a query that draws data from the Operator Transaction summary, display the summary. Superbase 4 software loads when the summary appears. This allows access to the OPTRANS file that contains all of the Operator Transaction data. To find out how to display the Operator Transaction summary, refer to the *Displaying Archived Summaries* chapter (LIT-120169).

To define a query that draws data from the Card Reader summary, start Superbase 4 software by displaying the summary. This allows access to the CARDRDR file which contains all of the Card Reader transaction data. To find out how to display the Card Reader summary, refer to the *Displaying Archive Summaries* chapter (LIT-120169).

To define a query that draws data from the Access Card summary, start Superbase 4 software by clicking the User Data button in the Modify Card dialog box for an access card. This allows access to the PERSON file, which contains all of the Access Card data. To find out how to display the Modify Card dialog box, refer to *Defining Access Cards* (LIT-120153) in the *Advanced User's Guide* of this manual.

Figure 20-1 shows an example of a query defined using data from the Access Cards summary.



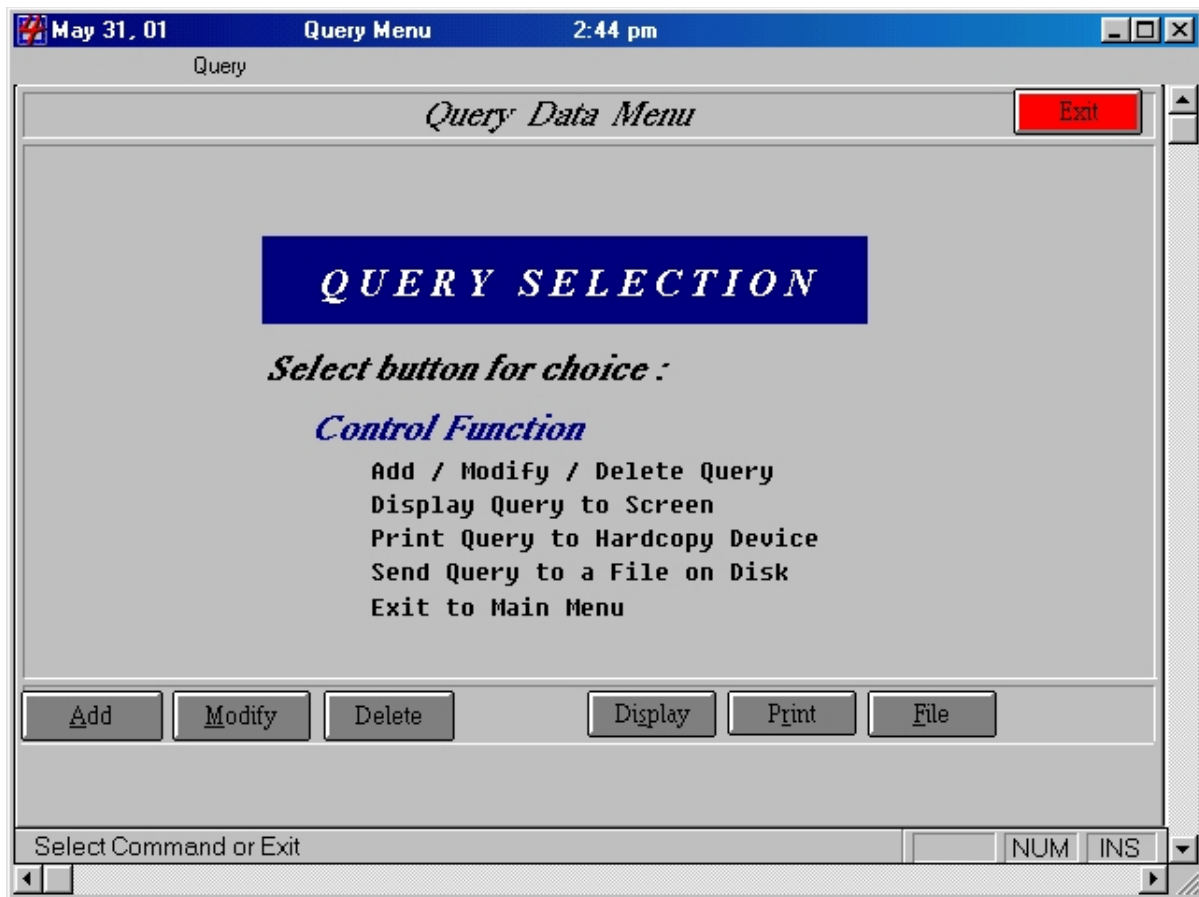
The screenshot shows a window titled "Query Menu" with a date of "May 31, 01" and a time of "11:33 am". The window displays a table titled "Eric's Query" with four columns: Card\_ID, Last\_Name, First\_Name, and Company\_ID. The table contains six rows of data. At the bottom of the window, there is a prompt "Press Space Bar to Continue" and two buttons labeled "NUM" and "INS".

Card_ID	Last_Name	First_Name	Company_ID
1	NEWBEE	BILLY	123
21	FLINTSTONE	WILMA	456
23	ARCHAMBEAU	CLARENCE	755
31	LOMBARDI	WILLIAM	273
49	JOHNSON	JOSEPH	209
110	WILLIAMS	TRAVIS	266

**Figure 20-1: Example Query**

## Displaying a Query

Use the Query menu (Figure 20-2) to display a query. The Query menu is accessible from three different Superbase 4 screens: the Main menu, the Operator Transaction menu, or the Card Reader menu.



**Figure 20-2: Query Menu**

For best results and up-to-date data, display the query from the function for which the query was created. For example, to display a query that gathers Operator Transaction data, display the query from the Operator Transaction Main menu.

## Query Title

The title section of a query can display the title, date, and page number of the query on each page. The upper portion of the Query Definition dialog box (see Figure 20-4) defines this section. Defining the title section is optional. If no title, date, or page numbers are defined, the query data appears on the first line of the printed page or PC screen.

If the query has a title, it appears centered on each page. The date appears in the upper left corner of each page, and the page number appears in the upper right.

## Query Output

The query output section of the Query Definition dialog box defines the type of information that the query collects, as well as how the information is ordered. The output section specifies data collection in four categories: Fields, Report, Filter, and Order.

To define a query, the *Fields* output must be specified; Report, Filter, and Order output are optional.

### ***Fields Output***

Clicking the Fields button displays the Fields Output dialog box (Figure 20-6). This dialog box specifies the fields from which the query draws data, as well as the page format. Individual fields can be up to 70 columns (character spaces) long across the page.

Before defining the Fields Output, determine how the query is going to be organized, including:

- which fields from which the query draws
- where each column should appear on the query, in character spaces (for example, a position of 20 means the column begins at 20 character spaces from the left side of the page)
- the limit to the number of characters that can appear in each field
- whether any of the fields should have a heading different from the field title that appears in the Fields dialog box (Figure 20-6)
- whether the query appears in the standard table format (as in Figure 20-1) or use the NEWLINE function (Figure 20-3). The NEWLINE format is useful for queries in which the columns would exceed the 70-character space maximum across the page.

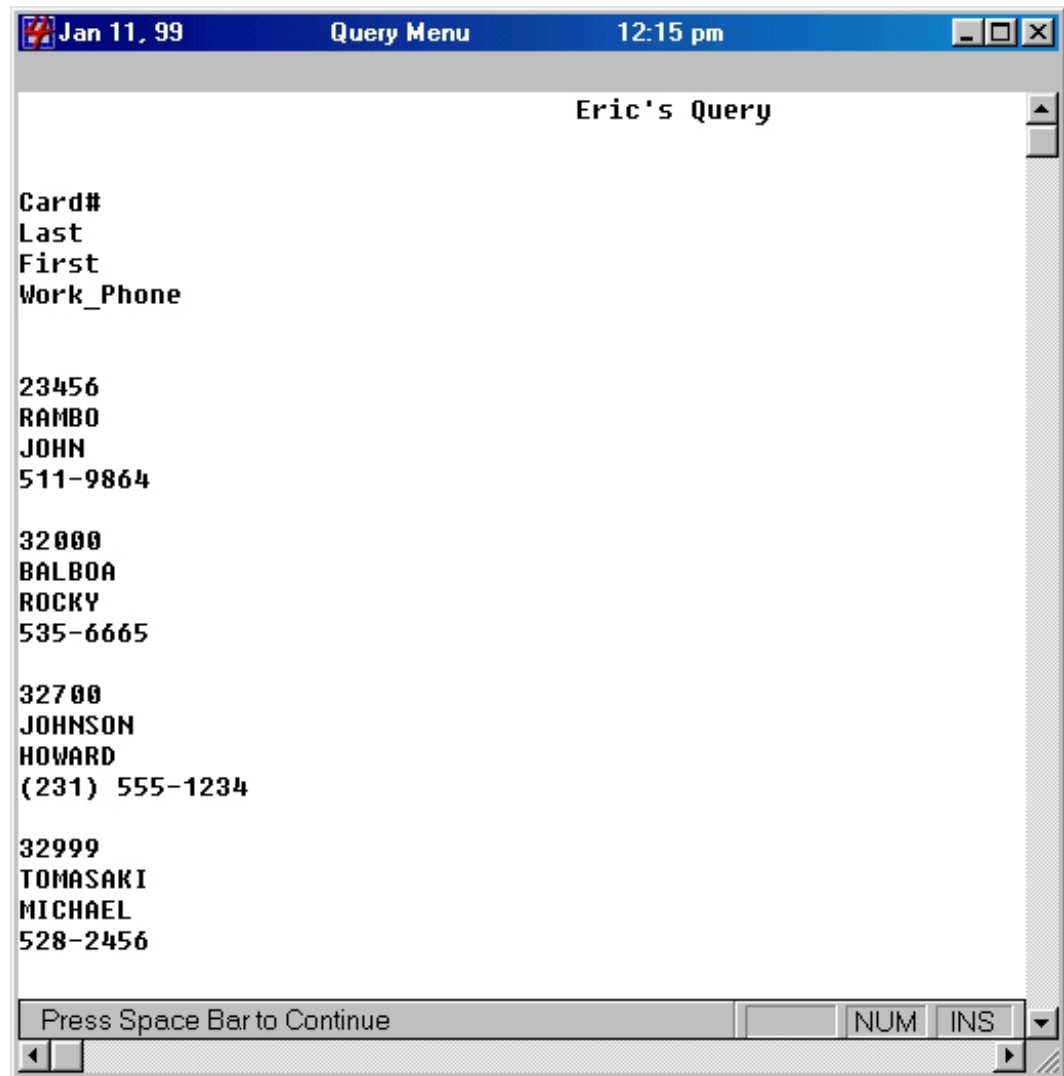


Figure 20-3: Example Query Using the NEWLINE Function

Table 20-1 lists the fields available for a query of Access Card User Data.

**Table 20-1: Access Card User Data Fields**

<b>Field</b>	<b>Description</b>	<b>Ranges</b>
<b>Card_ID</b>	Unique Card ID number as defined in Metasys software	Numeric, up to 5 characters between 0 and 65535
<b>Last_Name</b>	Last name of the card holder as defined in Metasys software	Text, up to 10 characters
<b>First_Name</b>	First name of the card holder as defined in Metasys software	Text, up to 8 characters
<b>Middle_Initial</b>	Middle initial of the card holder	Text, 1 character (automatically converted to upper case)
<b>Company_ID</b>	Unique ID number assigned to each card holder	Numeric, from 0 to 65535
<b>Mail_Station</b>	Mail station of the card holder	Alphanumeric, up to 10 characters (automatically converted to upper case)
<b>Department</b>	Department of the card holder	Alphanumeric, up to 20 characters
<b>Bld_Floor</b>	Building and floor of the card holder's office	Alphanumeric, up to 20 characters
<b>Work_Phone</b>	Office phone number of the card holder	Text, up to 20 characters (automatically converted to upper case)
<b>Car1_License</b>	License plate number of the card holder's primary vehicle	Alphanumeric, up to 10 characters (automatically converted to upper case)
<b>Car1_Year</b>	Year of the card holder's primary vehicle	Numeric, 4 characters
<b>Car1_Make</b>	Make (for example, Chevrolet, Ford) of the card holder's primary vehicle	Alphanumeric, up to 20 characters
<b>Car1_Model</b>	Model (for example, Chevette, LTD) of the card holder's primary vehicle	Alphanumeric, up to 20 characters
<b>Car1_Color</b>	Color of the card holder's primary vehicle	Alphanumeric, up to 20 characters
<b>Car2_License</b>	License plate number of the card holder's secondary vehicle	Alphanumeric, up to 10 characters (automatically converted to upper case)
<b>Car2_Year</b>	Year of the card holder's secondary vehicle	Numeric, 4 characters
<b>Car2_Make</b>	Make (for example, Chevrolet, Ford) of the card holder's secondary vehicle	Alphanumeric, up to 20 characters
<b>Car2_Model</b>	Model (for example, Chevette, LTD) of the card holder's secondary vehicle	Alphanumeric, up to 20 characters
<b>Car2_Color</b>	Color of the card holder's secondary vehicle	Alphanumeric, up to 20 characters
<b>Parking Lot</b>	Name of the parking lot assigned to the card holder	Alphanumeric, up to 20 characters
<b>PIN</b>	5-digit unique Personal Identification Number of the card holder	Numeric, 1 through 65,535
<b>Badge_Type</b>	Type of card the card holder is issued (that is, permanent, temporary, visitor)	Alphabetic, up to 20 characters
<b>Badge_Media</b>	Type of badge the card holder is using (that is, WIEGAND, N-CRYPT, MAGSTRIP, B/F NPAR, B/F PAR)	Alphabetic, up to 20 characters
<b>Continued on next page . . .</b>		

Field (Cont.)	Description	Ranges
<b>Issue_Date</b>	Date the access card was issued	Alphanumeric, automatically converted to the mmm, dd, yyyy format
<b>Expiration Date</b>	Date the access card expires	Alphanumeric, automatically converted to the mmm, dd, yyyy format
<b>Door_Access</b>	Doors for which the card can be used to enter or exit. (For Metasys Release 6.0, this field does not exist, although it still appears in the query list.)	Alphanumeric, up to 20 characters
<b>Access_Days</b>	Days of the week that the access card is valid. (For Metasys Release 6.0, this field does not exist, although it still appears in the query list.)	Alphabetic, up to 20 characters
<b>Access_Times</b>	Times of day that the access card is valid. (For Metasys Release 6.0, this field does not exist, although it still appears in the query list.)	Alphanumeric, up to 20 characters
<b>Social_Security</b>	Card holder's social security number	Numeric, up to 11 characters (automatically converted to upper case)
<b>Full_Name</b>	Card holder's first name, middle initial, and last name as defined in Superbase 4 software	Alphabetic, up to 24 characters--first name, middle initial, last name (read only)
<b>Photo</b>	Full path name (including the file extension) of the file containing a photograph of the card holder	Alphanumeric, up to 60 characters (automatically converted to upper case)
<b>Signature</b>	The full path name (including the file extension) of the file containing a signature of the card holder	Alphanumeric, up to 60 characters (automatically converted to upper case)
<b>Home_Phone</b>	Card holder's home phone number	Alphanumeric, up to 20 characters (automatically converted to upper case)
<b>Home_Address</b>	Card holder's home address	Alphanumeric, up to 30 characters
<b>Home_City</b>	City in which the card holder lives	Alphanumeric, up to 20 characters
<b>Home_Zip</b>	Zip code for the residence of the card holder	Numeric, up to 5 characters
<b>Emergency Info</b>	Full path name (including the file extension) for the file containing emergency information for the card holder	Alphanumeric, up to 60 characters (automatically converted to upper case)
<b>User1</b>	Information stored in the operator defined field <i>User Data 1</i>	Alphanumeric, up to 40 characters
<b>User2</b>	Information stored in the operator defined field <i>User Data 2</i>	Alphanumeric, up to 40 characters
<b>User3</b>	Information stored in the operator defined field <i>User Data 3</i>	Alphanumeric, up to 40 characters
<b>User4</b>	Information stored in the operator defined field <i>User Data 4</i>	Alphanumeric, up to 40 characters
<b>Home_State</b>	State in which the card holder lives	Alphanumeric, 2 characters (automatically converted to upper case)
<b>ID_Card</b>	Unique card ID number for the access card defined in Metasys software	Numeric, up to 5 characters between 0 and 65535 (read only)
<b>ID_Company</b>	Card holder's unique company ID (defined in Superbase 4 software)	Numeric, from 0 to 65535 (read only)
Continued on next page . . .		

Field (Cont.)	Description	Ranges
<b>Interlock_Grp</b>	Interlock group that represents the GPL interlock in which the AC object triggers other Metasys process to run (for example, turn lights on)	Numeric, from 0 to 64
<b>FAX_Number</b>	Card holder's facsimile phone number	Alphanumeric, up to 20 characters (automatically converted to upper case)
<b>U1_Header</b>	Field title for the User 1 field, as defined in Superbase 4 software	Alphanumeric, up to 14 characters (automatically converted to upper case)
<b>U2_Header</b>	Field title for the User 2 field, as defined in Superbase 4 software	Alphanumeric, up to 14 characters (automatically converted to upper case)
<b>U3_Header</b>	Field title for the User 3 field, as defined in Superbase 4 software	Alphanumeric, up to 14 characters (automatically converted to upper case)
<b>U4_Header</b>	Field title for the User 4 field, as defined in Superbase 4 software	Alphanumeric, up to 14 characters (automatically converted to upper case)
<b>Card_Issue_Lev</b>	Number of times a card has been issued to a card holder (as defined in Metasys software)	Numeric, from 0 to 7
<b>Exec_Privilege</b>	Executive privileges status of the card holder (as defined in Metasys software)	Boolean, 0 or 1 (0=No, 1=Yes)
<b>SysObjName_1*</b>	Name of the system and Access Control object for each controller to which the card holder is assigned (as defined in Metasys software)	Alphanumeric, up to 17 characters
<b>Proc_Grp_1*</b>	JC-BASIC/GPL process interlock group in which the card is linked (as defined in Metasys software)	Numeric, from 0 to 99
<b>TimeZone_1*</b>	Times of the week a card holder may access authorized doors (as defined in Metasys software)	Numeric, from 0 to 9
<b>Reader_1 through Reader_16**</b>	Card readers for a specific controller valid for a card holder (as defined in Metasys software)	Alphanumeric, up to 17 characters
<b>Curr_SystObj</b>	Name of the system and Access Control object that was last viewed through Superbase 4 software	Alphanumeric, up to 17 characters
<b>Curr_Int_Grp</b>	Interlock group for the last AC object viewed in Superbase 4 software. The interlock group represents the GPL interlock in which the AC object triggers other Metasys process to run (for example, turn lights on)	Numeric, from 0 to 64
<b>Curr_TimeZone</b>	Times of the week a card holder may access authorized doors (as defined in Metasys) for the last AC object viewed in Superbase 4 software	Numeric, from 0 to 9
<b>Curr_Read1-16</b>	Card readers for a specific controller valid for a card holder (as defined in Metasys) for the last AC object viewed in Metasys software	Alphanumeric, up to 17 characters

\* This field repeats for each controller (up to 32). The end number indicates the number of the controller shown on the Superbase 4 screen.

\*\* Card Readers are numbered consecutively, 1 through 512. For example, the Card Readers for controller number one are numbered 1 through 16. The second controller's Card Readers are numbered 17 through 32, and the third controller's Card Readers are numbered 33 through 48, etc.

Table 20-2 lists the fields available for an Operator Transaction summary query.

**Table 20-2: Operator Transaction Query Fields**

<b>Field</b>	<b>Description</b>	<b>Ranges</b>
<b>TRANTYPE</b>	Type of operator transaction that initiated a report (that is, Report, Object, Logon, or Feature)	Numeric, 1 character, from 0 to 3
<b>LOCATION</b>	Name of the PC file destination in which the transaction occurred	Alphanumeric, up to 8 characters
<b>GROUP_</b>	PC group in which the transaction occurred	Alphanumeric, up to 26 characters
<b>SYSTEM</b>	Name of the system in which the transaction was generated	Alphanumeric, up to 8 characters
<b>OBJECT</b>	Name of the object for which the transaction occurred	Alphanumeric, up to 8 characters
<b>ATTRIB</b>	Name of the attribute for which the transaction occurred	Alphanumeric, up to 8 characters
<b>ACCSLEVEL</b>	Password level of the user that logs on, or the password level required to perform a transaction	Numeric, 1 character, from 0 through 7
<b>DEVICE</b>	Name of the device where the transaction occurred	Alphanumeric, up to 8 characters
<b>FEATURE</b>	Either the name of the feature for which the transaction occurred, or the status of the object.	Alphanumeric, up to 8 characters
<b>VALUE</b>	Value of the affected object or attribute	Alphanumeric, up to 8 characters
<b>UNITS</b>	Units used to measure the value of the affected object (if the object is analog)	Alphanumeric, up to 6 characters
<b>DATE_Y</b>	Year that the report was generated	Numeric, 2 characters, from 00 to 99
<b>DATE_M</b>	Month that the report was generated	Numeric, 2 characters, from 01 to 12
<b>DATE_D</b>	Day that the report was generated	Numeric, 2 characters, from 01 to 31
<b>TIME_H</b>	Hour of the day the report was generated	Numeric, 2 characters, from 00 to 23
<b>TIME_M</b>	Minute of the day the report was generated	Numeric, 2 characters, from 00 to 59
<b>TIME_S</b>	Second of the day the report was generated	Numeric, 2 characters, from 00 to 59
<b>OPERATOR</b>	Initials of the operator who performed the transaction	Text, up to 3 characters
<b>ODATE_Y</b>	Year that the original transaction occurred	Numeric, 2 characters, from 00 to 99
<b>ODATE_M</b>	Month that the original transaction occurred	Numeric, 2 characters, from 01 to 12
<b>ODATE_D</b>	Day that the original transaction occurred	Numeric, 2 characters, from 01 to 31
<b>OTIME_H</b>	Hour of the day original transaction occurred	Numeric, 2 characters, from 00 to 23
<b>OTIME_M</b>	Minute of the day original transaction occurred	Numeric, 2 characters, from 00 to 59
<b>OTIME_S</b>	Second of the day original transaction occurred	Numeric, 2 characters, from 00 to 59
<b>TEXT_</b>	Description of the exact nature of the transaction (for example, object disabled)	Alphanumeric, up to 89 characters

Table 20-3 lists the fields available for a query of data from the Card Reader summary:

**Table 20-3: Card Reader Query Fields**

Field	Description	Ranges
<b>SYSTEM</b>	Name of the system containing the Access Controller whose card reader was used	Alphanumeric, up to 8 characters
<b>OBJECT</b>	Name of the Access Controller defined for the card reader that was used	Alphanumeric, up to 8 characters
<b>CARDNUM</b>	Card ID defined for the access card used	Numeric, up to 5 characters, from 0 to 65,535
<b>L_NAME</b>	Last name defined for the access card used	Text, up to 11 characters
<b>F_NAME</b>	First name defined for the access card used	Text, up to 9 characters
<b>STATUS_</b>	Status of the card reader that generated the report (either Normal or Abnormal)	Status, up to 8 characters
<b>TIME_H</b>	Hour of the day that the report was generated	Numeric, 2 characters, from 00 to 23
<b>TIME_M</b>	Minute of the day that the report was generated	Numeric, 2 characters, from 00 to 59
<b>TIME_S</b>	Second of the day that the report was generated	Numeric, 2 characters, from 00 to 59
<b>DATE_Y</b>	Year the report was generated	Numeric, 2 characters, from 00 to 99
<b>DATE_M</b>	Month that the report was generated	Numeric, 2 characters, from 01 to 12
<b>DATE_D</b>	Day that the report was generated	Numeric, 2 characters, from 01 to 31
<b>TEXT_</b>	Description of the transaction (for example, CARD ID 25: Access Granted)	Alphanumeric, up to 60 characters

A number of keywords are not shown as selection buttons in the Fields dialog box (Figure 20-6), but can still specify the format for Query output. Type these keywords directly into the fields text box with spaces or semicolons separating them from other words in the line.

Table 20-4 lists the key words and their functions. Place these keywords before the text they are formatting.

**Table 20-4: Keywords and Functions of Query Output**

<b>Keyword</b>	<b>Function</b>
<b>ALL</b>	Includes all fields in the query output. You can add derived columns to this output.
<b>FIELD</b>	Suppresses column headings. To suppress all headings, place the keyword at the beginning of the line. Otherwise, only those headings followed by the keyword are suppressed.
<b>DOWN</b>	Outputs data for each field on a separate line. Place the keyword at the beginning of the line before the field names. DOWN can also be used in conjunction with the Field keyword to hide headings. For example, FIELD DOWN Last_Name.person, Department.person would look like this: Jones 1237
<b>UL</b>	Underlines all text
<b>IT</b>	Italicizes all text
<b>OFF</b>	Turns off the text style it follows (that is, UL OFF turns off underlining. UL ON turns it on again.) This is useful for formatting certain portions of the query using a certain style.
<b>ATTR OFF</b>	Turns off all text style for styles that it precedes in the command line
<b>EJECT</b>	Ensures that all data for a single record is output on the same page. The number following EJECT should be the number of lines occupied by the record data. For example, if two lines output the data from each record, the command line might look like this: Last_Name.person, NEWLINE Department.person, Card_ID.person EJECT 2

### ***Report Output***

Click the Report button to analyze data collected by the query. For example, a report can count the total number of records in a query

### ***Filter Output***

Click the Filter button to limit the types of information the query collects. For example, the query could collect data from records where the Department field is defined as Research. The Filter works the same way as the filter option in the browsing control panel.

### ***Order Output***

Click the Order button to select the order in which the query data appears. The default order for the data is the order in which it is found on the disk.

## Detailed Procedures

### Defining a Query

To define a query:

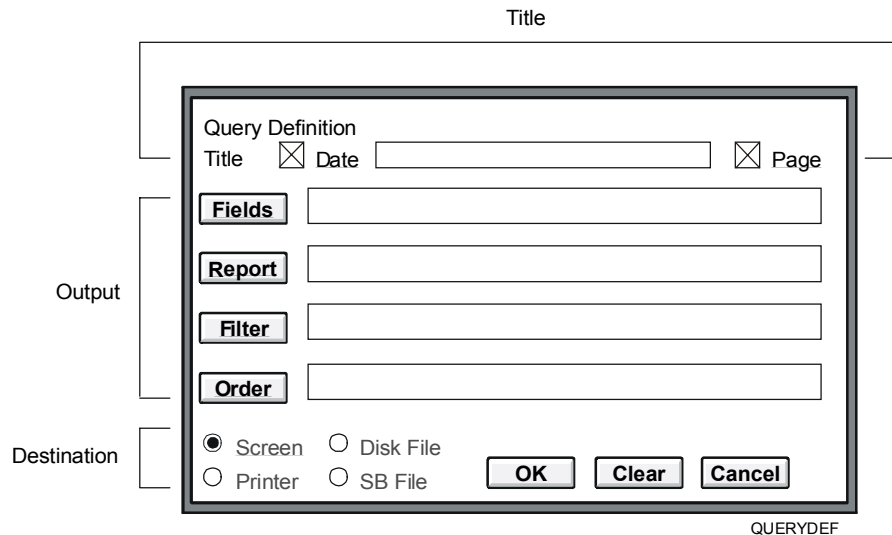
1. Start Superbase 4 software by displaying either the Operator Transaction summary or the Card Reader summary, or by clicking the User Data button in the Modify Card dialog box.

Note: Make sure to start Superbase 4 software from the correct file in order to gain access to the appropriate database.

2. If you started Superbase 4 software from the access card Modify Card dialog box, click Exit to return to the Main menu.

If you started Superbase 4 software by displaying the Operator Transaction or Card Reader summary, click Cancel to exit to the Operator Transaction or Card Reader menu.

3. Click the Query > Add. The Query Definition dialog box appears (Figure 20-4).



**Figure 20-4: Query Definition Dialog Box**

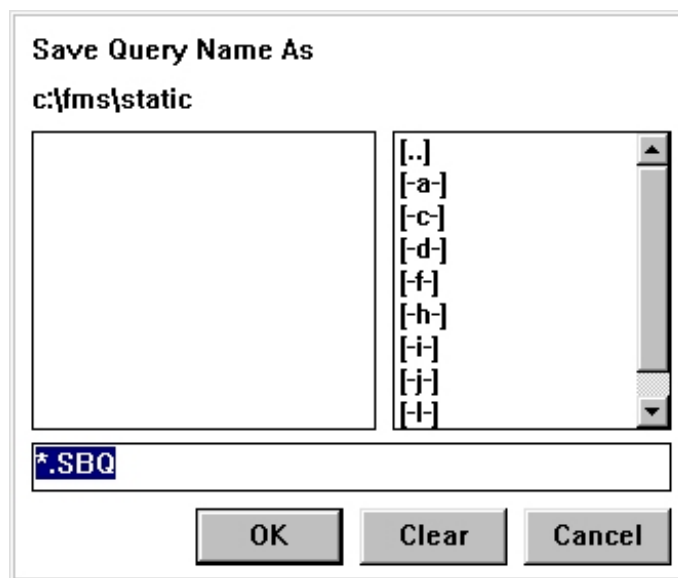
4. Define the title section to make a title, page number, or date to appear on each page of the query. Detailed information about defining the query title appears later in this chapter.

Define the output section to specify what information should be in the query. Always define the Fields section. The Report, Filter, and Order sections are optional. Detailed information about defining query output appears later in this chapter.

**Notes:** The destination section is set to the Screen destination. Full Superbase 4 capabilities are necessary to change the destination.

Superbase 4 software is case sensitive. To do a search for an exact match (that is, using the = option rather than Like), make sure to match the upper and lower case letters as they have been entered in the database.

5. When finished defining the query, click OK in the Query Definition dialog box. The Save Query dialog box appears (Figure 20-5).



**Figure 20-5: Save Query Dialog Box**

6. Type a name to give the query in the text box and click OK

### Defining the Query Title

To define the title section of a query:

1. Click the Query button from the Superbase 4 menu of the database to which the query belongs (the Operator Transaction menu, Card Reader menu, or Main menu). The Query menu appears (Figure 20-2).
2. Click Add. The Query Definition dialog box appears (Figure 20-4).
3. To have the date to appear on the query, click the date box. An X appears in the box, and the date appears in the upper left corner of each page of the query.
4. Type the title in the text box, located between the Date and Page boxes. The title appears centered at the top of each page of the query.
5. Click the Page box to number the pages. An X appears in the box. The page number appears in the upper right corner of each page of the query.

### Defining Query Output

To define the query output for queries in the standard table format:

1. Click the Fields button in the Query Definition dialog box. The Query Fields dialog box appears (Figure 20-6).

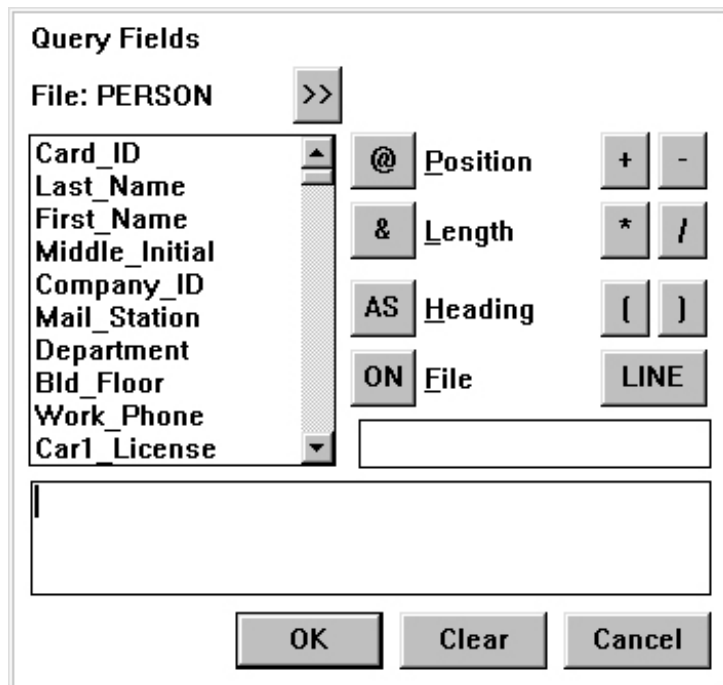







Figure 20-6: Fields Dialog Box

Table 20-5 describes the Fields dialog box selection buttons and their function.

**Table 20-5: Fields Dialog Box Buttons**

Button	Function
 <b>Position</b>	Click this button to specify where each field should appear on the query. Use it to organize the fields in the query, or to specify a certain amount of space between fields.
 <b>Length</b>	Click this button to limit the number of characters that can appear in a field, and to specify the number of digits that can appear before and after a decimal point. For example: if only the first few characters of a lengthy field are important, limit the field length so that the query only displays the relevant information.
 <b>Heading</b>	Click this button to specify a heading name other than the field name.
 <b>File</b>	Use this button to extract data from more than one database for a query. This query is called a Multi-File query and is not recommended for querying Metasys BAS data, since current data can be accessed from only one database at a time.
<b>+ - * / ( )</b> <b>Derived Column Expressions</b>	Use the mathematics keys on the right side of the dialog box to perform mathematic computations on two or more numeric fields. For example, use the addition button (+) to add the values of two fields to form another entry in a query.
 <b>Line</b>	Click this button to start a column heading on a new line. If a new line is not specified, the query outputs the data in a tabular format. To specify a new line, click the Line button and select the field that should begin on a new line. Click the Line button once for each blank line between field headings.

- Click the @ Position button and type the column number where the first column in the query should begin in the Value text box. Click Value or press Enter.

One column equals one character space wide, beginning at the left margin. For example, @20 means that the column will be positioned 20 character spaces from the left of the page. The first column is usually positioned @1.

- To limit the width of the column, click & Limit. Type the maximum number of characters that the column should contain in the Value text box. Click Value or press Enter.

Notes: This step is optional. However, make sure that the query's columns do not overlap on each other.

To specify the number of digits that can appear before and after a decimal point, type the number of digits to appear before the decimal, the decimal point, and the number of digits to appear after the decimal. For example, if no more than two digits should appear both before and after the decimal point, type 2.2 in the Value text box.

4. Click on a field name in the list box. The values selected in the previous two steps now apply to this field.

To create a query field that is a mathematical computation of two or more numeric fields, use the Derived Column Expression buttons, and enclose the equation in parentheses.

5. To give the field a heading in the query that is different from its field name, click AS Heading and type the new heading into the value text box. Click Value or press Enter.
6. Repeat Steps 2 through 5 for each field that appears in the query. When finished, click OK. The query definition dialog box (Figure 20-4) reappears with the field output definition displayed in the Fields text box.
7. Click another option and continue defining the query, or click OK to save the query.

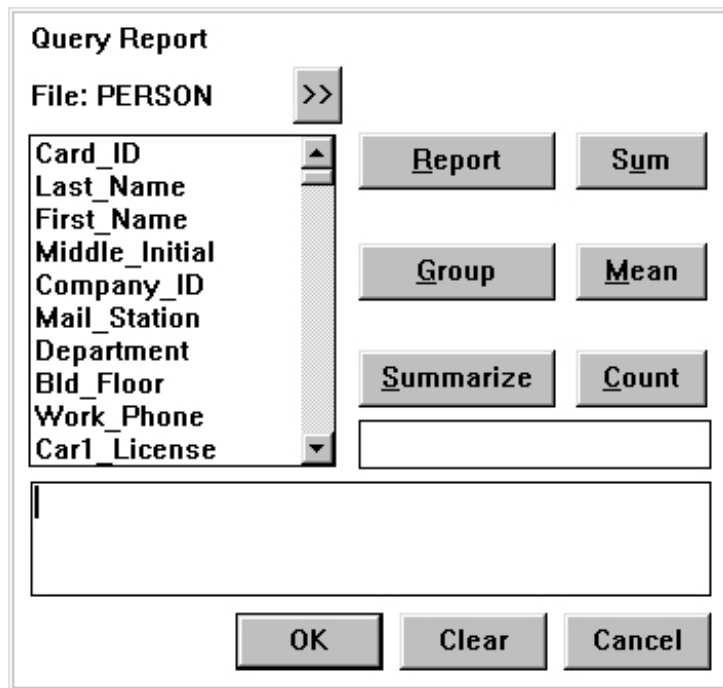
To define queries using the NEWLINE format (Figure 20-3):

1. Click the Fields button in the Query Definition dialog box. The Query Fields dialog box appears (Figure 20-6).
2. Click the Line button. NEWLINE appears in the Field text box.
3. Click the Field name that should appear first in the query. The name appears to the right of NEWLINE in the Field text box.
4. To give the field a heading in the query that is different from its field name, click AS Heading and type the new heading into the Value text box. Click Value or press Enter.
5. Repeat steps 2 through 4 for all remaining fields that appears in the query.
6. When finished, click OK. The query definition dialog box (Figure 20-4) appears with the field output definition displayed in the Fields text box.
7. Click another option and continue defining the query, or click OK to save the query.

## Report Output

To define a report function:

1. Click the Report button on the Query Definition dialog box. The Report dialog box appears (Figure 20-7).



**Figure 20-7: Report Dialog Box**

Table 20-6 details the functions of the buttons in the Report dialog box.

**Table 20-6: Report Dialog Box Buttons**

Button	Function
<b>Report</b>	Click this button to analyze information drawn from all of the records in a file.
<b>Group</b>	Click this button to display information drawn from a subgroup of records within a file. The way the query is ordered (using the Order button) determines which subgroups are available for use in the Report section. Define the order before using the Group function in the Report dialog box. For example, if the query is ordered by Department, count the number of records in each department by clicking Group > Count > Department.
<b>Summarize</b>	Click this button before clicking OK in the Report dialog box to display a summary of the query data specified in the Reports line without displaying the fields specified in the Fields line. This is useful for displaying file Report calculations without going through the individual records.

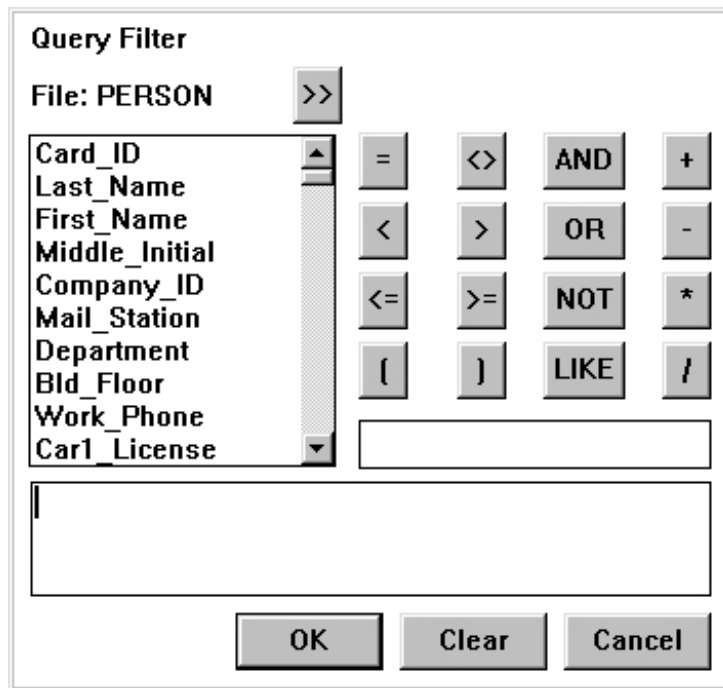
**Note:** The functions of the Sum, Mean, and Count buttons vary depending on whether the report function is analyzing all records in a file or a subgroup of records in a file.

2. Click the fields that the report functions will affect.
3. To analyze information drawn from all of the records in a file, click the Report button. Report is displayed in the Report text box.
  - a. Click Count to count the number of records in the file.
  - b. For the sum of a numeric field, click Sum and select the numeric field from the Report list box.
  - c. For the mean of a numeric field, click Mean and select the numeric field from the Report list box.
4. To display information about a subgroup of records in a file, click the Group button. Group is displayed in the Report text box.
  - a. To count the number of records in a subgroup of a file, click Count and select the subgroup (field).
  - b. To view the sum of a numeric subgroup, click Sum and select the subgroup (numeric field).
  - c. To view the mean of a numeric subgroup, click Mean and select the subgroup (numeric field).
5. To view a summary of the query data specified in the Reports line without displaying the fields specified in the Fields line, click Summarize.
6. Click OK. The Query Definition dialog box (Figure 20-4) appears with Report selections displayed in the text box located to the right of the Report button.
7. Click another option and continue defining the query, or click OK to save the query.

### Filter Output

To filter a query:

1. Click the Filter button in the Query Definition dialog box. The Filter dialog box appears (Figure 20-8).



**Figure 20-8: Filter Dialog Box**

2. Click on the fields in the list box that the filter should limit (that is, Card\_ID).
3. Specify how the filter function should limit each field by clicking the selection buttons located on the right side of the list box and filling in the value for each limitation. An explanation of each of the buttons is listed Table 20-7.

**Table 20-7: Filter Dialog Box Buttons**

Option	Filter Function
=	Displays a record with an exact value (for example, <b>Card ID = 27</b> displays the record with a Card ID number of 27) Note: Superbase 4 software is case sensitive. The upper and lower case letters used with the = function should match those in the database. If you are unsure of the case, use the LIKE function.
< >	Displays records excluding a specific value (for example, <b>Department &lt;&gt; "Research"</b> displays all records except those with the Department field defined as Research)
<	Displays values less than a specific amount (for example, <b>Card ID &lt; 100</b> displays all records with Card IDs defined as 99 or less)
>	Displays records with a value greater than a certain amount (for example, <b>Card ID &gt; 100</b> displays all records with Card IDs defined as 101 or more)
<=	Displays records with a value less than or equal to a specific amount (for example, <b>Card ID &lt;= 100</b> displays all records with Card IDs defined as 100 or less)
>=	Displays records with a value greater than or equal to a specific amount (for example, <b>Card ID &gt;= 100</b> displays all records with Card IDs defined as 100 or more)
( AND )	Displays records according to two expressions where one expression has higher priority than the other (for example, <b>NOT (Department LIKE "Research" AND Card ID &lt; 17)</b> displays only records with Department defined as anything other than Research, and Card IDs defined as less than 17)
AND	Displays records where two conditions are true (for example, <b>Card ID &lt; 1000 AND Card ID &gt; 100</b> displays records with Card IDs defined between 101 and 999)
OR	Displays records that meet one of two conditions (for example, <b>Department LIKE "Research" OR Department LIKE "Marketing"</b> displays only those records with Department defined as Research or Marketing)
NOT	Displays records with values that negate an expression (for example, <b>NOT (Department LIKE "Research" AND Card ID &lt; 17)</b> displays only those records with Department defined as anything other than Research, and Card IDs defined as less than 17)
LIKE	Displays a record with an exact value (for example, <b>Last Name LIKE "Jones"</b> displays only those records with the Last Name defined as Jones) Type an asterisk in place of any unknown letters (for example, <b>Last Name LIKE "Joh**"</b> lists all records with the first three characters defined as Joh). Type an asterisk before and after the character to find any field containing a certain character (for example, <b>Last Name LIKE "**R**"</b> displays all records with an R anywhere in the Last Name field). Type a question mark to denote the number of unknown characters (for example, <b>Last Name LIKE "???r?"</b> displays all records with an R as the fourth letter of the Last Name).
+ - * /	Mathematically compute two or more numeric fields

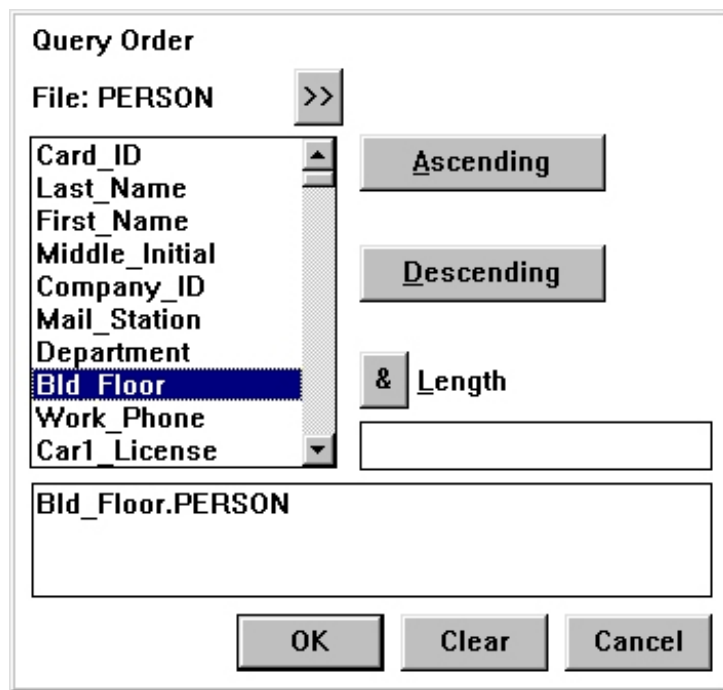
- Click OK. The Query Definition dialog box (Figure 20-4) appears with the Filter selections displayed in the text box located to the right of the Filter button.
- Click another option and continue defining the query, or click OK to save the query.

### Ordering the Output

Note: Define the Fields output before defining the order. Refer to *Defining Query Output* earlier in this section.

To display query data in a specific order:

1. Click the Order button on the Query Definition dialog box. The Order dialog box appears (Figure 20-9).



**Figure 20-9: Order Dialog Box**

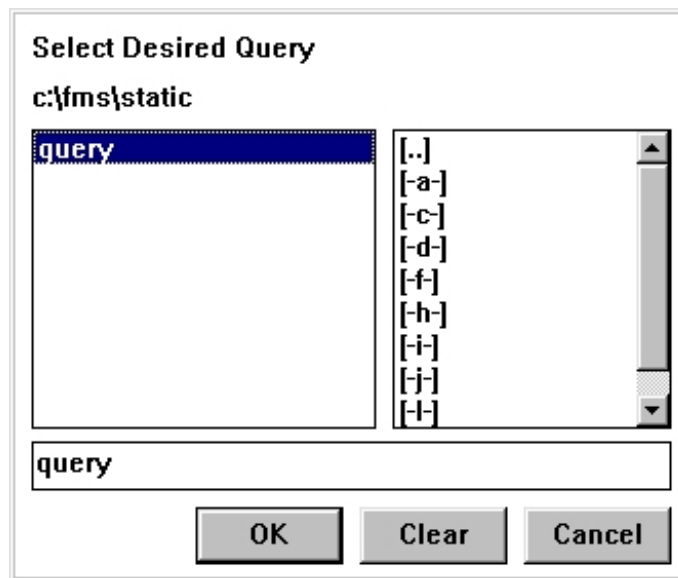
2. To limit the number of characters the query should consider when ordering the field, click the & Length button. Type the number of characters in the Value text box and press Enter or click Value. The default value is 15.
3. Click a field in the list box to use to order the file (for example, Last\_Name).  
Note: This field must be one that the query summarizes (that is one that was selected in the Fields dialog box during query definition).
4. Click Ascending or Descending. An ascending order begins with the lowest number or first alphabetical character. A descending order begins with the highest number or the last alphabetical character.
5. Click OK. The Query Definition dialog box (Figure 20-4) appears with the Order selections displayed in the text box next to the Order button.

6. Click another option and continue defining the query.
7. When finished defining the query, click OK in the Query Definition dialog box. The Save Query dialog box appears (Figure 20-5).
8. Type a name for the query in the text box and click OK.

## Modifying a Query

To modify a query:

1. Click the Query button on either the Main menu, Operator Transaction menu, or Card Reader menu. The Query menu appears (Figure 20-2).
2. Click Modify. The Query Selection dialog box appears (Figure 20-10).



**Figure 20-10: Query Selection Dialog Box**

3. Select the query from the list box. The query name appears in the text box.
4. Click OK. The Query Definition dialog box appears (Figure 20-4).
5. Make the changes in the definition box, and click OK.

## Deleting a Query

To delete a query:

1. Click the Query button on either the Main menu, Operator Transaction menu, or Card Reader menu. The Query menu appears (Figure 20-2).
2. Click Delete. The Query Selection dialog box appears (Figure 20-10).
3. Select the query from the list box. The query name appears in the text box.
4. Click Delete. The query is deleted, and the OWS returns to the Query menu.

## Displaying a Query

To display a query:

1. Click the Query button on either the Main menu, Operator Transaction menu, or Card Reader menu. The Query menu appears (Figure 20-2).

To display the Operator Transaction summary or Card Reader Transaction *menu*, click Cancel in the Operator Transaction or Card Reader *summary*. The summary closes and its Transaction Menu appears.

To display the Card Reader Main menu, display the Access Cards summary, select a card, and click Modify Card Data from the Action menu to display the Modify Card dialog box. Start Superbase 4 software by clicking User Data, and click Exit in the Employee menu to go to the Card Reader Main menu.

2. Click Display in the current menu.
3. Select the query from the list box. The query name appears in the text box.
4. Click OK. The query appears. (See Figure 20-1 for an example.)
5. Click Clear to clear the selection or click Cancel to cancel the query request.

Press the space bar to page down in a query. To return to the beginning of a query, exit the query and display it again. To exit the query, page down to the end of the query and press the space bar again.

## Printing a Query

To print a query:

1. On the Query menu, click Print. The Query Selection dialog box appears (Figure 20-10).
2. Select the query from the list box. The query name appears in the text box.
3. Click OK. A message box appears indicating that the query is being printed.

## Saving a Query to a File

Note: Click the File button on the Query menu to save the query to an ASCII file rather than print it or display it on the PC.

To save the query to a file:

1. Click the Query button on the Main Menu, Operator Transaction Menu, or Card Reader Menu. The Query Menu appears (Figure 20-2).
2. Click File. The Query Selection dialog box appears (Figure 20-10).
3. Select a query to save to an ASCII file. The selected query name appears in the text box.
4. Click OK. The query is saved in the same directory as the selected query in the ASCII format.

Note: The ASCII file has an .ASC extension.

## Exiting a Query

To exit a query:

1. Page down to the end of the query by pressing the space bar. Press the space bar again. The query closes, and the Query menu appears.

Note: If the query is only one page long, press the space bar once to return to the Query menu.

2. Click the Exit button, or click Exit on the Query Command menu. The Query menu closes and the Main menu appears.

Note: If the query was accessed from the Operator Transaction or Card Reader summary, the OWS returns to the summary rather than the Main menu.